

Red-D-Arc Welderentals

When you're ready to weld.

ProHeat 35 Induction Heating Systems

Weld Preheating,
Post-Weld Heat Treatment,
Coating Removal, Shrink Fit,
Liquid- and Air-Cooled Systems

Sales, Rentals, Lease Programs



Red-D-Arc Welderrentals

When you're ready to weld.

What is Induction Heating?

Induction heating is a simple, cost-effective heating process that delivers fast and consistent heat in the following applications...

Welding Fabrication and Construction

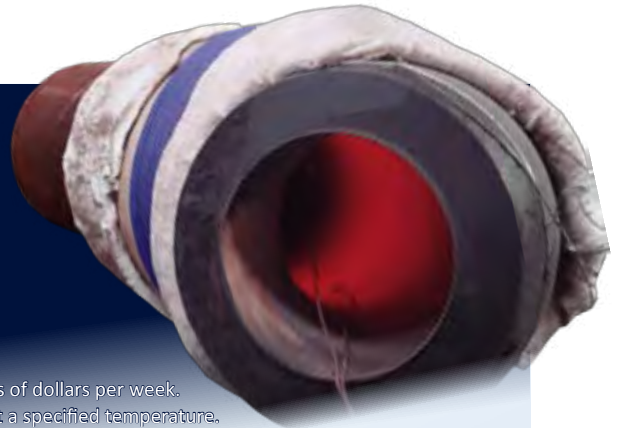
Weld Preheating and Stress Relieving

Post-Weld Heat Treatment (PWHT)

Coating Removal

Shrink Fit Applications

Compared to flame or resistance heating, induction-heating can save hundreds or thousands of dollars per week. Induction heating brings a part to temperature in a fraction of the time and holds the part at a specified temperature.



Benefits of Induction Heating

Uniformity and Quality

Provides the highest degree of temperature control across the heat affected zone (HAZ)

Reduced Cycle Times

Significantly faster time-to-temperature than resistant methods

Cost Reduction

No fuel costs and minimal insulation costs; reusable insulation reduces disposal and replacement costs

Power Efficiency

Operates at 92% efficiency transferring more energy to the part, decreased heating times, improved power efficiency

Ease of Use

Simple set-up using preheat blankets or flexible heating cables; on-board diagnostics and operator tutoring system

Reliability

Induction heating system-components make cycle interruptions unlikely; simple cabling

Versatility

Pipe preheat and stress relief; weldolets, elbows, valves, I-beams, complex shapes

Safety

Fewer fumes; eliminates fuel gases; no exposure to flame, gases, or hot elements

Environmental

Less airborne particulate; improved work environment results in higher worker productivity

How does Heating Induction work?

Induction heating induces heat **electromagnetically** rather than by using conventional heating elements. Induction heating acts more like a microwave oven; the appliance remains cool while the food cooks from within. In an industrial part, heat is induced in the part by subjecting it to a **high-frequency magnetic field**. The magnetic field creates eddy currents, exciting the part's molecules and generating heat. Because heat generation occurs slightly below the metal surface, no heat is wasted.

Unlike resistance heating, which heats the **surface** of the part, induction heating heats **within** the part. The depth of heating depends on the frequency used. High frequency (50 kHz) heats closer to the surface, while a lower frequency (60 Hz) penetrates deeper into the part. This allows more efficient heating of thicker parts. The induction coil does not heat up (as the work-piece heats up) since the conductor is large for the current being carried.

The ProHeat 35 system consists of a power source, induction blankets, and associated cables; with a built-in temperature control for manual- or temperature-based programming.

Air-cooled systems are used for pre-heat only; for applications up to 400 degrees F (204 degrees C).

Liquid-cooled systems are used for high-temperature pre-heating, stress relieving, and hydrogen bake-out for applications up to 1,450 degrees F (788 degrees C) and they can be used with an optional Digital Recorder for critical applications.



ProHeat 35 Induction Heating Systems

Quick Specs

Applications

Transmission Pipeline - Construction/Repair
Pipe Fabrication Shops
Power Piping - Construction/Repair
Petrochemical - Construction/Repair
Shipbuilding
Mining Equipment Maintenance
Drill Pipe Manufacturing
Shrink Fit

Process

Induction Heating
Input Power
460 - 575 VAC, 3-phase, 60 Hz CSA
400 - 460 VAC, 3-phase, 50/60 Hz CE
Output Frequency
5-30 kHz
Rated Output
35 kW at 100% duty cycle

kVA/kW at Rated Output

39/37
Input Amperes at Rated Output
400 V: 60 amps
460 V: 50 amps
575 V: 40 amps
Temperature Rating
Storage: -40°C to +60°C
Operation: -30°C to +50°C

Dimensions

H: 27.5 in (699 mm)
W: 21.75 in (552 mm)
D: 36.75 in (933 mm)
Weight
Net: 227 lb (103 kg)
Ship: 265 lb (120 kg)

ProHeat 35 Air-Cooled System

Designed for Preheating Applications up to 400° F (204° C), Optional Digital Recorder

The system can be operated in Manual Programming mode where a power output is applied to a part for a specified time or in the Temperature Based Programming mode where the part temperature is used to control power output. Air-cooled blankets are available for pipe diameters from 8 to 56 inches or, in the case of plate, the lengths are from 40 to 185 inches.

Typical Applications for Air-Cooled Induction Heating Systems

On-Shore Transmission Pipelines
Off-Shore Transmission Pipelines (Barge)
Ship Building
Mining



ProHeat 35 Liquid-Cooled System

Designed for High Temperature Preheating, Stress Relieving, and Hydrogen Bake-Out up to 1450° F (788° C), Optional Digital Recorder

The system can be operated in Manual Programming mode where a power output is applied to a part for a specified time or in the Temperature Based Programming mode where the part temperature is used to control power output. Liquid-cooled heating cables provide a highly versatile tool for preheating a variety of pipe diameters and even flat plate. In general, shorter cables are used for a smaller diameter pipe and are easier to handle and set-up. Longer cables are used for larger diameter pipe or small pressure vessels and tanks. Great for preheat applications on geometrics that prevent use of air-cooled blankets.

Typical Applications for Liquid-Cooled Induction Heating Systems

Pipe Fabrication Shops
Field Construction of Power and Process Piping
Shrink Fit
Shipbuilding - Propeller Shafts, Piping Systems, Plate (High Duty Cycle/High Temp)
Mining



Heavy-Duty Induction Cooler is designed with an efficient fin-and-tube heat exchanger, 2-1/2 gallon polyethylene tank, high-pressure pump and blower to yield a high cooling capacity. Includes a flow sensor/indicator and temperature sensor to provide system reliability.

Red-D-Arc Welderrentals

When you're ready to weld.

ProHeat 35 Accessories

Remote Contactor Control



TC Thermocouple Extension Cable



Digital Recorder (Optional)

Stores temperature data based on time. A touch-screen enables simple programming and use. Data can be transferred to a PC for printing, storage, or analysis.

Accessories for Air-Cooled Systems

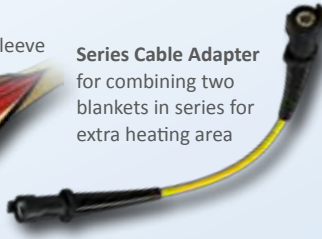
Induction Blankets



Replaceable Kevlar
Induction Blanket Sleeve



Series Cable Adapter
for combining two
blankets in series for
extra heating area



Output Extension Cables with Twist-lock
Connectors (25', 50', and 75' lengths)



Accessories for Liquid-Cooled Systems

Output Extension Cables
10', 25', and 50' lengths



Liquid Cooled
Heating Cables



Preheat Cable Covers



Preheat Insulation and Postweld
Heat Treatment Insulation Blankets



1-866-733-3272

9600012 - JAN 10